

CLAIMS:

1. A mixing or tumbling apparatus for tablets or other loose articles, comprising a drum comprising a generally cylindrical drum wall and front and rear end walls, said front end wall being annular in shape with a central mouth for discharge of the drum contents; and at least one baffle mounted to the inside surface of said front end wall to protrude into the drum interior, said baffle being mounted to said front end wall at a non-radial angle, said baffle comprising a substantially ribbon-like body region with two opposed flat sides and narrow edges, said body region being arcuate and twisted along substantially its full length, said baffle including a proximal end adjacent said drum wall to receive said articles from said drum interior and a distal end adjacent to and partly occluding said central mouth and comprising a paddle-like surface, wherein rotation of said drum in a first direction causes said baffle to push the drum contents inwardly away from said mouth for tumbling of the drum contents while rotation in a second opposed direction causes said baffle to scoop the drum contents from the interior of the drum to slide along a side surface of said front baffle for discharge from said mouth.
2. An apparatus as defined in claim 1, wherein said front end wall is generally conical in shape and protrudes outwardly from said drum.
3. An apparatus as defined in claim 1, further comprising an outwardly protruding collar surrounding said mouth, and said baffle extends at least partly through said collar.
4. An apparatus as defined in claim 1, wherein the distal end of said baffle comprises a flat platelike member which is folded inwardly relative to said body.
5. An apparatus as defined in claim 1, wherein the degree of twist of the body region of said baffle is between 20° and 90°.
6. An apparatus as defined in claim 5, wherein the degree of twist along the length of said baffle is between 40° and 50°.

7. An apparatus as defined in claim 1, further comprising an array of two or more of said baffles.
8. An apparatus as defined in claim 1, wherein said drum wall is perforated.
9. An apparatus as defined in claim 1, wherein said proximal end of said baffle includes a scoop for receiving said drum contents upon rotation of said drum in said second direction.
10. An apparatus as defined in claim 1, further comprising at least one elongate rib mounted to the inside of said cylindrical drum wall at an angle displaced from the elongate axis of said drum for diverting said drum contents towards said baffle during rotation of said drum in said second direction, said rib being mounted in a position such that at least part of said drum contents diverted by said rib are received by said baffle.
11. An apparatus as defined in claim 10 wherein said at least one rib is arcuate.
12. An apparatus as defined in claim 1 further comprising means for supporting and rotating said drum such that its axis of rotation is substantially horizontal, said means comprising a motor, force transfer means to transfer rotary movement of said motor into rotation of said drum, and a reverser to selectively reverse the direction of rotation of said drum upon actuation.
13. A mixing or tumbling apparatus for tablets or other loose articles, comprising a drum comprising a generally cylindrical drum wall and front and rear end walls, said front end wall being annular in shape with a central mouth for discharge of the drum contents; and at least one baffle mounted to the inside surface of said front end wall to protrude into the drum interior, said baffle being mounted to said front end wall at a non-radial angle, said baffle comprising a substantially ribbon-like body region with two opposed flat sides and narrow edges, said body region being arcuate and twisted along substantially its full length, said baffle including a proximal end adjacent said drum wall to receive said articles from said drum

interior and a distal end adjacent to and partly occluding said central mouth and comprising a paddle-like surface, wherein rotation of said drum in a first direction causes said baffle to push the drum contents inwardly away from said mouth for tumbling of the drum contents while rotation in a second opposed direction causes said baffle to scoop the drum contents from the interior of the drum to slide along a side surface of said front baffle for discharge from said mouth, and further comprising at least one elongate rib mounted to the inside of said cylindrical drum wall at an angle displaced from the elongate axis of said drum for diverting said drum contents towards said baffle during rotation of said drum in said second direction, said rib being mounted in a position such that at least part of said drum contents diverted by said rib are received by said baffle.

14. An apparatus as defined in claim 13, wherein said front end wall is generally conical in shape and protrudes outwardly from said drum.

15. An apparatus as defined in claim 13, further comprising an outwardly protruding collar surrounding said mouth, and said baffle extends at least partly through said collar.

16. An apparatus as defined in claim 13, wherein the distal end of said baffle comprises a flat platelike member which is folded inwardly relative to said body.

17. An apparatus as defined in claim 13, wherein the degree of twist of the body region of said baffle is between 20° and 90°.

18. An apparatus as defined in claim 17, wherein the degree of twist along the length of said baffle is between 40° and 50°.

19. An apparatus as defined in claim 13, further comprising an array of two or more of said baffles.

20. An apparatus as defined in claim 13, wherein said drum wall is perforated.

21. An apparatus as defined in claim 13, wherein said proximal end of said baffle includes a scoop for receiving said drum contents upon rotation of said drum in said second direction.
22. An apparatus as defined in claim 13 wherein said at least one rib is arcuate.
23. An apparatus as defined in claim 13 further comprising means for supporting and rotating said drum such that the axis of rotation is substantially horizontal, said means comprising a motor, force transfer means to transfer rotary movement of said motor into rotation of said drum, and a reverser to selectively reverse the direction of rotation of said drum upon actuation.